

Circuit Quantum Electrodynamics

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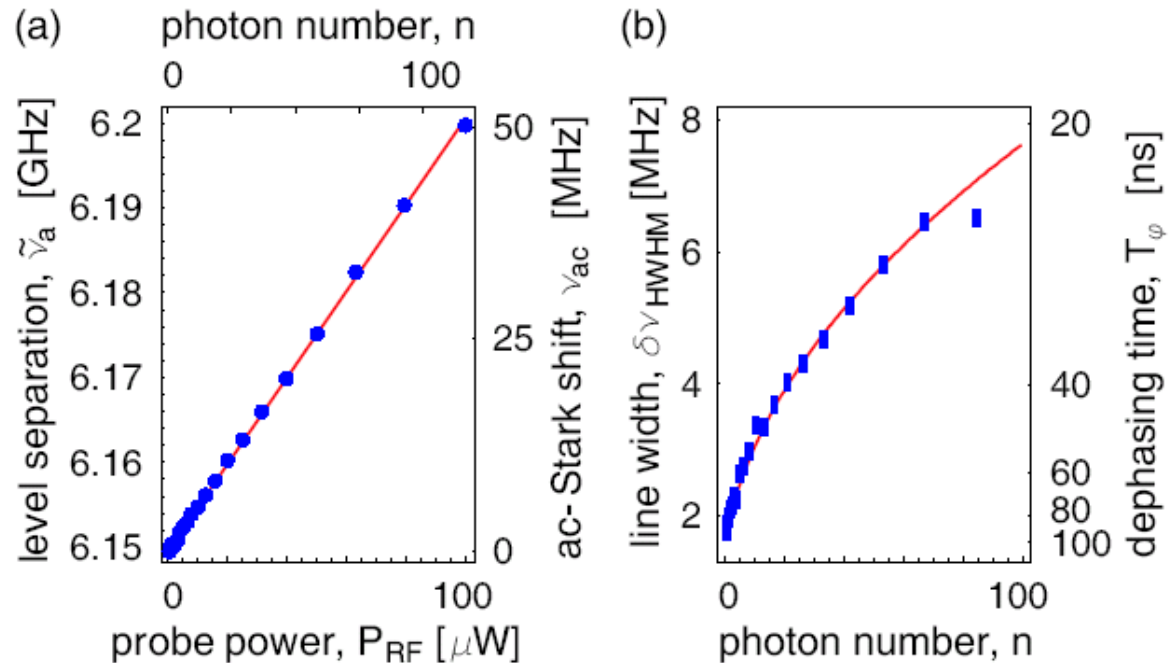
In collaboration with Rob Schoelkopf we have developed a new paradigm for doing quantum optics in superconducting electrical circuits.

Wallraff et al.

Nature (9 Sept. 2004)
(cond-mat/0407325)

D.I. Schuster et al.

(cond-mat/0408367)



- a) AC Stark shift of qubit in cavity
 - b) Measurement induced dephasing rate caused by quantum noise in the ac Stark shift.
- (Red lines are theoretical predictions.)

Educational:

Undergraduate Research:

Daniel Sank

Cliff Cheung

(senior thesis submitted to PRB)

Graduate students:

P. Chakraborty

R. Huang

G. Mias

L. Bishop

T. Yu

Post-doctoral Fellows:

A. Durst

K. Sengupta

A. Blais

Outreach:

Public Lecture

‘Quantum Money,

Teleportation and

Computation’

(Boulder, CO, July 2004)

Lecture Demonstration for
Yale Physics Olympics (200
high school students)

DCMP ad hoc committee on
outreach